

Air Quality Conformity Analysis

Introduction

The Clean Air Act Amendments of 1990 expanded transportation's role in contributing to national clean air goals. The 1990 amendments expand the definition of "transportation conformity" to:

Conformity to the (air quality implementation) plan's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards; and that such activities will not (i) cause or contribute to any new violations of any standards in any area, (ii) increase the frequency or severity of any existing violation of any standard in any areas, or (iii) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.

This document describes the conformity determination for particulate matter of 2.5 micrometers in diameter or less (PM_{2.5}) and nitrous oxide (NOX) precursors in the SCATS MPO area and must show that the SCATS 2030 Transportation Plan and TIP meet the applicable conformity test. The conformity determination was conducted in accordance with the *Criteria and Procedures for Determining Conformity to State or Federal Implementation Plans of Transportation Plans, Programs and Projects Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act*, 40 CFR Parts 51 and 93, issued November 24, 1993, and Final Rules adopted May 6, 2005 (70 FR 24280), which incorporated the Final Conformity Rule of July 1, 2004 (69 FR 4004) and in accordance with the Ohio State Transportation Conformity Rules, Ohio Administration Code Part 3745-1-1-01 through 20, issued August 21, 1995 and amended Spring 1997.

In order to determine conformity, the SCATS 2030 Transportation Plan tests must meet the following requirements:

- Must be based on the latest planning assumptions
- Must use the latest emissions model
- Must include interagency consultation
- Must provide for Public Involvement
- Must show the plan meets the emissions budget test
- Must include a MPO Board conformity determination resolution

Nonattainment Area Designation

Although the Canton/Massillon Metropolitan Statistical Area (MSA) area also includes Carroll County, OEPA (Ohio Environmental Protection Agency) and USEPA concurred that only Stark County was designated as the nonattainment area within the MSA as Carroll County is rural in nature with a population of less than 30,000. A summary of the history of PM_{2.5} conformity determinations follows:

- January 5, 2005: The Canton/Massillon MSA was classified as nonattainment for the 1997 PM_{2.5} (annual) standard in the Federal Register.
- December, 2006: The 2006 PM_{2.5} (24-hour) standard was established, changing from the annual standard to the 24-hour standard and setting it to 35 micrograms per cubic meter.
- March, 2007: SCATS showed that Stark County was in conformity for the 1997 PM_{2.5} (annual) standard based on the permitted no-greater-than-2002 baseline test.
- June 15, 2009: USDOT issued a conformity determination for Stark County for the 1997 PM_{2.5} (annual) standard.
- November 13, 2009: USEPA designated Stark County as nonattainment for the 2006 PM_{2.5} (24-hour) standard in the Federal Register.
- January 26, 2010: The 1997 PM_{2.5} (annual) SIP budgets were approved for Stark County via the Federal Register.

The applicable conformity test for the new 2006 (24-hour) standard is to compare analysis year emission burdens to the 1997 PM_{2.5} (annual) SIP budgets. This conformity documentation is addressing the new 2006 PM_{2.5} (24-hour) standard.

Interagency Consultation and Conformity Process

Interagency Consultation was achieved via a series of email exchanges, meetings and conference calls between USEPA, Ohio EPA, FHWA, ODOT and SCATS.

Based on those email exchanges, meetings, and conference calls, the following was established:

This interagency consultation call was held on January 20, 2010, to initiate Ohio's procedures for conducting transportation conformity to US EPA's 2006 (daily) PM_{2.5} standard nonattainment area designations. Ohio 2006 nonattainment area designations were Cleveland/Akron/Lorain, Canton, and Steubenville OH/Weirton WV. Conference call participants included representatives from Federal and state agencies and Metropolitan Planning Organizations (MPOs) from the respective nonattainment areas. Conference call discussion generally followed the agenda and draft conformity tests table, shown on page 5 of this document. These notes will similarly, follow the agenda topics.

Designations and conformity requirements

The 2006 PM_{2.5} designations and geographies were reviewed. Discussion confirmed that new MPO Transportation Plan and TIP conformity determinations for the 2006 PM_{2.5} standard must be in place, effective December 14, 2010.

Conformity pollutants

Discussion confirmed that conformity for the 2006 PM_{2.5} standard will address direct PM_{2.5} and NO_x precursor.

Latest planning assumptions

TDM modeling inputs for the 2006 PM_{2.5} conformity analysis will reflect most recent MPO socio-economic and land use data and existing/TIP/Transportation Plan networks.

Latest emissions modeling

MOBILE6.2 will be the model of record for the 2006 PM_{2.5} conformity analyses. ODOT will, however, also generate MOVES based emission results associated with this effort. The MOVES work will serve as a test for Ohio's transition to the new software platform. The MOVES based emissions will not be a formal component of the 2006 PM_{2.5} conformity determinations.

Conformity tests

Conformity for the Clev/Ak/Lorain, Canton, and Ohio portion of the Steubenville areas will be demonstrated based on 1997 (annual) PM_{2.5} standard SIP 2009 budget tests. Federal Register Notice adequacy findings for these budgets are currently in progress. Budget test analysis years will be 2014, 2020, and 2030 (see following 1/21/10 US EPA Region V email excerpt.

Everyone,

Thank you for your patience yesterday on the call. I have double checked the need for a 2010 analysis year and that year is NOT a required analysis year. So, the years 2014, 2020, and 2030 are appropriate.

The reason that I believe it is best to demonstrate conformity to the 2009 budgets as a whole without subtracting Ashtabula township emissions is that this conformity determination can serve 2 purposes. It will demonstrate conformity for the 2006 24 hour PM standard and it will also serve to demonstrate conformity for the new adequate budgets for annual PM (turn off the 18 month clock). I don't think I explained this on the call yesterday.

Pat

Analysis year emissions data for the Clev/Ak/Lorain conformity tests will include Ashtabula Township, Ashtabula County emissions. Ashtabula Township is included in the 1997 (annual) PM_{2.5} area geography and SIP budget. Ashtabula Township is not included in the 2006 (daily) PM_{2.5} area geography. This matter will be footnoted in the region's conformity documentation.

Conformity for the West Virginia portion of the Steubenville area will be demonstrated based on daily interim less than base line tests. WV DEP has a SIP mobile source insignificance request pending with US EPA – Region 3, but the schedule for acting on this request is uncertain. Therefore, the interim conformity test regulations are applicable. Because the 1997 PM_{2.5} standard conformity guidance is not final, base line emissions data will be established for years 2002, 2005 and 2008. Analysis years are 2014, 2020, and 2030.

Temperatures

Emissions data for the Clev/Ak/Lorain, Canton, and Ohio portion of the Steubenville areas will be generated using the same single season average annual temperature data that was used to establish the SIP budgets.

Emissions data for the West Virginia portion of the Steubenville area will be generated based on average summer day temperature data, as the 2006 PM_{2.5} standard violations occurred in the summer season.

Public involvement

The MPO conformity analyses and documentation will be reviewed consistent with the MPOs' adopted public involvement procedures.

MPO Conformity determination schedules

AMATS, BHJ, NOACA, and SCATS will finalize their 2030 Transportation Plan and 2008-2011 TIP conformity determination processes, documentation, and resolutions, for submittal to US DOT, in September, 2010.

Latest Planning Assumptions

For this analysis, the latest planning assumptions available for the Canton region will be used. The Canton travel demand model underwent a major upgrade in 2007 and this new model was used for the analysis. The model is a traditional four-step model that includes trip generation, trip distribution, mode choice, and traffic assignment. Upgraded model components that were not in the previous model include: household cross-classification, separate truck assignment, non-bus transit modes, and peak period assignments. The 2000 base year was established to take advantage of census data and new roadside origin-destination surveys that were taken at the Stark County line. The model was calibrated to replicate 2000 traffic counts, and was validated to meet the standards of ODOT's Traffic Assignment Procedures manual.

Employment variables are based on the 2006 update of the ES202 data. Other independent variables were not changed from those used for the Long Range Plan update of 2006.

Current and Future Population - Base-year population data is 2000 Census data. Population was forecast to the year 2030 in 2004 as part of the Stark County Comprehensive Plan. The Plan used county-level population projections which were provided by the Ohio Department of Development - Office of Strategic Research (ODOD-OSR) through the year 2030. The RPC sub-allocated the projections to the Traffic Analysis Zone (TAZ) level. The sub-allocation process was based on allocating dwelling unit growth to TAZs

Networks

SCATS' Long Range Plan listing of projects was used to create the 2014, 2020, and 2030 networks. Networks for these analysis years had been created in the past, but SCATS updated the networks to reflect changes in the TIP for this analysis. The networks were also updated to reflect changes in the 2009 Financial Forecast.

Independent Variables

Independent variables (land use/socio-economic data) as provided by SCATS were used to generate new traffic assignments for each analysis year 2014, 2020, and 2030. The variable data for the intermediate years (2014, and 2020) were initially created by ODOT using interpolation between the model validation year and the final year of the LRP. SCATS used that data as a starting point and corrected the data to accurately account for predicted timing of the changes of land use development and other socio-economic data.

Latest Emissions Modeling

Emissions data for this conformity analysis were generated using US EPA MOBILE6.2 emission factors.

Temperature data for MOBILE6.2 emission factors used data from the Akron Canton Airport for the Canton nonattainment area conformity process.

Annual PM_{2.5} emissions data were established using the single season methodology. The standard emissions modeling routines establish daily pollutant burdens. Annual direct PM and NOx precursor emissions for the PM_{2.5} conformity tests were established by multiplying the daily model results by 365.

PM_{2.5} conformity will be established based on 2009 Budget tests.

Public Involvement Process

SCATS will seek public comments at the September 22, 2010, meeting of the Citizens' Advisory Council and will solicit and consider ongoing public input consistent with the adopted 2006 "Public Involvement Process" manual. Notices will be placed the three main newspapers of Stark County, The Canton Repository, The Massillon Independent, and The Alliance Review. A copy of this document will also be placed on the Stark County Regional Planning Commission web site starting on September 15, 2010.

Conformity Determination Schedule

SCATS will finalize its 2030 Transportation Plan and 2008-2011 TIP conformity determination processes, documentation, and resolutions, for submittal to US DOT, in September, 2010. Final conformity determination will be in place by December 14, 2010.

Canton 2030 Transportation Plan Update Conformity Analysis Summary

PM_{2.5}

Attainment status: PM_{2.5} Nonattainment area
 Geography: Stark County, Ohio
 Conformity Tests: 2009 baseline interim budget tests of SCATS 2030 Transportation Plan/TIP analysis year networks
 Analysis Years: 2014 1st analysis year
 2020 Interim year
 2030 Plan horizon year

PM_{2.5}				
Stark Co.	Tons/Year			
	2009 Budget	2014	2020	2030
Direct PM	88.38	54.97*	45.77*	47.52*
NOx Precursors	5103.36	2684.21*	1653.01*	1285.24*

* From Mobile 6.2 run by ODOT

The conformity analysis highway networks and budget test results are as follows:

- **2014 Network:** This is a budget-year analysis. The network includes the baseline scenario network plus the TIP projects out to the year 2014. The trip table is based on 2014 Independent Variables. The annual total tons for **PM_{2.5}** was **55** tons and for **NOX Precursors** was **2684** tons.
- **2020 Network:** This is an interim analysis year to meet the requirement that analysis years must be no more than ten years apart. The network includes the 2014 network plus regionally significant projects that are expected to be open to traffic by the 2020 analysis year. The trip table is based on 2020 Independent Variables. The annual total tons for **PM_{2.5}** was **46** tons and for **NOX Precursors** was **1653** tons.
- **2030 Plan Horizon Year Network:** This represents the completed Plan network using the Plan horizon year 2030 trip table. The annual total tons for **PM_{2.5}** was **48** tons and for **NOX Precursors** was **1285** tons.

Other SCATS Planning Assumptions

This section details planning assumptions utilized by SCATS and were not specifically addressed in the interagency coordination discussion.

TAZ Level Allocation: TAZ-level travel-demand-model (TDM) variables were developed in 2004 based on the previously described county-level population and employment forecasts. For transportation planning it was necessary to allocate this growth to the TAZ level and develop other data such as available vehicles, nonresidential floor area and acreage. Residential growth was allocated on a dwelling unit basis. Dwelling units were assigned to zones based on the following factors:

- Accessibility to a major county arterial road;
- Availability (or planned extension) of public water and sewer services;
- Availability of vacant zoned residential land;
- Present or future residential subdivision activity and platted lots;
- Absence of major physical or environmental constraints to urban development

Population was then derived from dwelling units based on a person per dwelling unit ratio that was also forecast. Vehicles and labor force data were then derived from the population data.

Non-residential employment was allocated by industry based on zoning, individual communities' land use plans and factors similar to those used for the residential land use. SCATS has confidence that these numbers represent the latest and best available data.

Projects

The following table shows all non-exempt 2030 Long-Range Plan projects and the year by which they will be built.

Name	Route	From	To	Type Work	Year
12th St NW	CR240	Monument	Maple	Roadway and Bridge Rehab	2015
55th Street	CR 146	Birmingham	Harmont	Roadway Improvement	2015
Arlington Ave	TR 234	At Strausser St		Intersection Improvement	2015
Cherry/Locust	SR93	intersection		Intersect Widening	2015
Cleveland Ave	SR 800	45th St	Mill St	Widen for TWLTL thru section;	2015
Cleveland Ave	CR 66	At Mt Pleasant		Intersection Improvement	2015
Frank Avenue	CR 229	Mega St	Applegrove At	Roadway Widening	2015
Hills & Dales Rd	CR 98	Wales Ave	Sir Thomas	Widen to 4 lanes	2015
Hills & Dales Rd	CR 226	Woodlawn Ave	Whipple Ave	Widening from 2 lanes to 5 lanes	2015
Main St	SR 153	Louisville WCL to SR 44	SR 44	Reconstruction, Widen to 3 lanes	2015
Market Ave	CR 62	4 intersections	In Lake Twp	Intersection Upgrading	2015
Middlebranch Ave	CR 192	At State St		Intersection Improvement	2015
SR 619 at McCallum	SR 619	Intersection		Construct Roundabout	2015
Trump Ave	CR 170	At Georgetown		Intersection improvement	2015
US 30 at Broadway	US 30	Intersection		Add Turn Lanes	2015

Name	Route	From	To	Type Work	Year
Waynesburg Dr	SR 43	17th St	New US 30	Widen for TWLTL thru section	2015
Waynesburg Dr	SR 43	At SR 183		Add turn Lane	2015
20th St NW	CR 221	At Lakeside		Intersection Safety Improvement	2020
30th St NE	CR 67	At Harrisburg		Intersection Improvement	2020
Applegrove Connector	CR 190	Frank Ave	Strausser	New connector	2020
Applegrove St	CR 190	Marquardt	Market Ave	Widen to 4 lanes	2020
Columbus Rd	CR 67A	At Beeson & Reeder		Roundabout	2020
Edison St	SR 619	Cleveland Ave	SR 43 North	Widen to 4 lanes	2020
Frank Ave	CR 229	Fulton Rd	University St	Widen to 5 lanes	2020
Fulton Rd	SR 687	0.28 miles E of SR 241	Brunnerdale Ave	Widen to 5 lanes	2020
Fulton Rd		At Park Dr		Add turn lane	2020
Hankins St	CR 240	Wales Ave	Louisa Marie Ave	2 Lane Improvement	2020
Harmont Ave	CR 170	SR 153	US 62	Widen to 4 lanes	2020
I-77	IR 77	US 30 Interchange		Interchange Safety & Capacity improvements	2020
Jackson Ave	TR 242	Richville Dr	Lincoln Way	2 Lane/RR Bridge	2020
Mahoning Road	SR153	Maple	Harmont	Roadway and Intersection Improvements	2020
Main St		At Tremont		Upgrade intersection	2020
Main St Connector		Old Main St	New Main St at Sawburg	New 2-lane connector	2020
Market Ave	SR 43	55th St	Applegrove St	Widen to 4 lanes	2020
Market Ave	CR 62	At Mt Pleasant		Intersection Safety Improvement	2020
Pittsburg Ave		Applegrove	Shuffle	Widen for turn lane	2020
Richville Dr	CR 248	Nave St	Southway St	Minor widening	2020
Strausser St	CR 231	At High Mill Ave		Intersection improvement	2020
Strausser St	CR 231	At Lake O Springs Ave		Intersection Improvement	2020
Strausser St	CR 231	At SR 236		Intersection improvement	2020
US 30	US 30	Trump Ave	SR 44	New 4-Lane Freeway	2020
US 30 Connector		SR 44 Interchange	SR 172 at Miday	New 2-lane connector	2020
Wales Ave	SR 241	Hills & Dales Rd	Portage St	Widen to 4 lanes	2020
Wales Rd	SR 241	At Lake Ave		Upgrade intersection	2020
Wales Rd	SR 241	Lincoln Way East	Hills & Dales Rd	2 lanes + Turn lane	2020
Walnut Rd	CR 248	Southway St	16th St SE	2 Lane improvement	2020
Whipple Ave	CR 214	Applegrove St	Shuffel Dr	Widen to 5 lanes	2020
Whipple Ave	CR 214	Southway St	13th St	2-lane/RR bridge	2020
12th St NW	CR 240	At Market Ave		Intersection Widening	2030
Beech St	CR 95	At Beechwood Ave		Intersection Improvement	2030
Beeson St	CR 41	At Freshley Ave		Intersection Improvement	2030
Fohl St	CR 252	At Shepler Church		Intersection Improvement	2030
Fohl St	CR 252	Navarre	I-77	2 Lane improvement	2030
Jackson Ave	TR 242	12th St NW	Perry Dr	Widen to 3 lanes	2030
Lincoln Way W	SR 172	At Main St		Upgrade intersection	2030

Name	Route	From	To	Type Work	Year
Market Ave	SR 43	Applegrove St	Mt Pleasant St	Widen to 4 lanes	2030
Navarre Rd	CR 511	SR 21	1 Mile E of SR 21	Widen to 3 lanes	2030
Trump Ave	CR 170	Lincoln St	SR 153	Widen to 4 lanes	2030
Wales Ave	SR 241	Portage St	Summit Co Line	Widen to 4 lanes	2030
Whipple Ave	CR 214	Shuffel Dr	Mt Pleasant St	New 3-lanes	2030
Canal Fulton Connector	TR 356	Butterbridge	Locust St	New 2-lane connector	2030
Everhard Whipple	CR 215	At intersection		Widen to 5 or more Lanes	2030
Mahoning Extension	CR 1	Patterson Ave	Armour St	New 2-lane connector	2030
Reno Drive		SR 44	Nickleplate	New Facility	2030
SR 44 Bypass	SR 44	SR 153	Frana Clara	New 2-lane bypass / RR Bridge	2030
Sterilite St Extension		Navarre Rd	Fohl St	New 2-lane connector	2030
Trump Ave	CR 170	SR 43	New US 30	2 Lanes / new connector	2030
US 30	US 30	SR 44	SR 183	Super 2 lane	2030
US 30**	US 30	SR 183	East Rochester	Super 2 lane	2030
US 62	US 62	At Harmont		Grade Separation	2030
US 62	US 62	Columbus Rd	SR 44	Intersection Upgrading	2030
US 62	US 62	Market Ave	Columbus Rd	Major Reconst / Access Control	2030
US 62**	US 62	SR 225	Salem	New 4-Lane Freeway	2030

Final Conformity Determination

As described in this document, the conformity determination analysis was conducted consistent with the Criteria and Procedures for Determining Conformity to State or Federal Implementation Plans of Transportation Plans, Programs and Projects Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act, 40 CFR Parts 51 and 93, issued November 24, 1993 and Final Rules adopted May 6, 2005 (70 FR 24280), which incorporated the Final Conformity Rule of July 1, 2004 (69 FR 4004).

Mobile 6.2 Results

SCATS Daily PM 2.5 Air Quality Analysis

Direct PM				
Budget	Year	# Days	Model PM 2.5	TOTAL PM 2.5 (tons/yr)
	2009			88.38
	2014	365	0.15	54.97
	2020	365	0.13	45.77
	2030	365	0.13	47.52
NOX Precursors				
Budget	Year	# Days	Model NOX	TOTAL NOX (tons/yr)
	2009			5103.36
	2014	365	7.35	2684.21
	2020	365	4.53	1653.01
	2030	365	3.52	1285.24

Direct PM

	Links	Intra
2014	0.1496	0.0010
2020	0.1246	0.0008
2030	0.1295	0.0007

NOX

2014	7.3078	0.0462
2020	4.5011	0.0277
2030	3.5011	0.0201

RESOLUTION OF THE POLICY COMMITTEE OF THE STARK COUNTY
AREA TRANSPORTATION STUDY
REAFFIRMATION OF THE TRANSPORTATION IMPROVEMENT
PROGRAM AND THE TRANSPORTATION PLAN
CONFORMITY BETWEEN THE PLAN, TIP AND SIP

WHEREAS, the Policy Committee of the Stark County Area Transportation Study is designated as the Metropolitan Planning Organization (MPO) by the Governor acting through the Ohio Department of Transportation (ODOT) and in cooperation with locally elected officials in the Canton, Ohio urbanized area as evidenced in the Agreement of Cooperation between ODOT and the Stark County Regional Planning Commission, encompassing Stark County; and

WHEREAS, the MPO has, pursuant to 23 United States Code 134, and 49 United States Code 1602(a)(2), 1603(a), 1604(g)(1), prepared the "**Year 2030 Transportation Plan for Stark County, Ohio**", and

WHEREAS, the MPO has, pursuant to 23 United States Code, and 49 United States Code 1602(a)(2), 1603(a), and 1604(g)(1) and (1), prepared a **Transportation Improvement Program** (TIP) for fiscal years 2008 through 2011 effective July 1, 2007, and

WHEREAS, the USEPA designated Stark County as nonattainment for the PM_{2.5} (fine particulate) and eight-hour ozone air quality standards in the Federal Register January 26, 2010, and

WHEREAS, **Section 176(c)(3) of the Clean Air Act** Amendments of 1990 requires that the MPO make a determination that the Transportation Improvement Program and the Regional Transportation Plan for the transportation planning area are in conformity with respect to Ohio's State Implementation Plan for attainment of the National Ambient Air Quality Standards (NAAQS), and

WHEREAS, a quantitative air quality emission analysis of the Transportation Plan has been completed in accordance with the requirements specified by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) and the Clean Air Act Amendments of 1990, and

WHEREAS, this analysis shows that the TIP and Transportation Plan produce emissions less than the 2009 base year emissions for the applicable analysis years, and

WHEREAS, the projects programmed in the SCATS Fiscal Year 2008-2011 Transportation Improvement Program are consistent with the "**Year 2030 Transportation Plan for Stark County, Ohio**" and were included in the air quality analysis completed for the Plan and found to be in conformity with the State Implementation Plan.

SCATS RESOLUTION FY 2011-07 - Reaffirm Conformity of Plan, TIP and SIP

NOW THEREFORE, BE IT RESOLVED:

1. That this Committee reaffirms its approval of the "**Year 2030 Transportation Plan for Stark County, Ohio**" as the Transportation Plan for the Stark County area and recommends that its members incorporate the improvements into their planning for transportation improvements in their governmental units, and
2. That this Committee reaffirms its approval of conformity of the 2008-2011 Transportation Improvement Program for fiscal years 2010 through 2011 and recommends that its members incorporate the improvements into their transportation improvement programming for their governmental units, and
3. That this Committee affirms the consistency between the Transportation Plan, Transportation Improvement Program and the State Implementation Plan for air quality.
4. That this Committee authorizes the staff to provide copies of this Resolution to the appropriate parties as evidence of action by the MPO.



Tom Ault, 2010 Chair
SCATS Policy Committee

Oct. 25, 2010

Date